



Creating Healthy Indoor Environments in Tribal Communities: Best Practices from Tribal Programs

December 9, 2013
1 – 2 p.m. EDT



Indoor Air Quality (IAQ)

Brenda Doroski:

Thank you, Hope, and welcome everyone. We're very excited to be hosting this webinar on Creating Healthy Indoor Environments in Tribal Communities.

Introductions

Facilitator:

Brenda Doroski
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**Speakers:**

Johna Boulafentis
Environmental Outreach Specialist
Nez Perce Tribe's ERWM Air Quality Program
JohnaB@nezperce.org



Scott Weir
Air Quality Coordinator
Kickapoo Tribe of Kansas
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Indoor Air Quality (IAQ)

Brenda Doroski:

Okay, let's get started. So we're very excited to have Johna Boulafentis and Scott Weir joining us on today's webinar. Johna has worked for the Nez Perce Tribe's Air Quality Program for over eight years. She provides air quality outreach and education to use on adults on the Nez Perce reservation.

Her duties include compliance assistance related to outdoor burning, indoor air quality assessment, and woodstove health-related studies.

Let me tell you a little bit about Scott Weir. Scott's scientific background includes 19 years of laboratory science and 14 years of experience as an environmental scientist at the Kansas Department of Health and Environment Bureau of Air and Radiation.

Scott designed and provided oversight of the Kansas Ambient Air Monitoring Network. Upon his retirement from state service in 2009, he worked for the Sac and Fox Nation of Missouri in Kansas and Nebraska. He began service with the Kickapoo Tribe in Kansas in 2012 and currently serves as a member of the Tribal Air Monitoring Support Center's Hearing Committee.

So we're very excited to have both of these tribal air coordinators joining us here today.

Webinar Objectives

- Hear from two tribal environmental health professionals on how they worked with schools in their communities.
- Learn how a walkthrough assessment can identify potential IAQ risks and be the first step in implementing Technical Solutions.
- Gain insight into how to effectively communicate to get buy-in and promote teamwork.
- Identify the needs, gaps and opportunities in schools in tribal communities.
- Discover resources to help you achieve long-term success.
- Interact with tribal air quality experts.



Indoor Air Quality (IAQ)

Brenda Doroski:

Let me go over quickly what the webinar objectives are. First as I mentioned, you'll hear from these two tribal environmental health professionals on how they work with the schools in their communities. You'll also learn how a walkthrough assessment can identify potential indoor air quality risks and be the first step in implementing the technical solutions in schools.

You'll gain insight into how to effectively communicate to get buy-in and promote teamwork in your schools, and you'll be able to identify the gaps and opportunities in schools in tribal communities and how you can help address them. You'll discover some resources to help you achieve long-term success, and finally, you'll have a chance to interact with our two air quality experts.

Today's Webinar Presentation and Materials

- The PowerPoint slides, a Questions and Answers document and a list of resources will be available to you in a few weeks on the *IAQ Tools for Schools* website:
www.epa.gov/iaq/schools/webconferences.html.



Indoor Air Quality (IAQ)

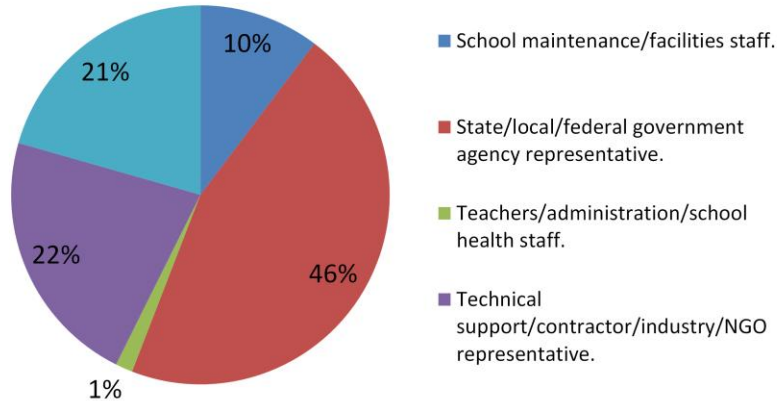
Brenda Doroski:

Today's webinar presentation of the materials will be available on EPA's website in a couple of weeks. We'll also send you an email letting you know once they've been posted.

So if you're interested in downloading the presentation slides from this webinar or from previous webinars, you can go to EPA's webinar resource page listed on this slide to download the presentation along with the complete list of the questions and answers discussed today as well as additional resources affiliated to this topic.

Polling Question 1

What sector do you represent?



Indoor Air Quality (IAQ)

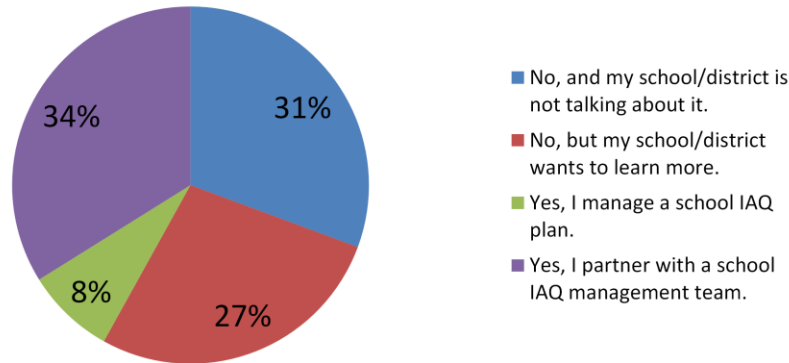
Brenda Doroski:

So before we get started, we'd like to get to know you just a little bit better through a quick poll. So you'll see appear on your screen a quick polling question: what sector do you represent?

Okay, so it looks like about 50 percent of you are from state, local, and federal government agencies; about 20 percent from a tribal office; and then we have the remaining: school maintenance staff, school teachers make up a small percentage of their own today, and 22 percent are technical or NGO representatives. So this is great, gives us just a better feel of who we're, who we're talking with today.

Polling Question 2

Are you currently involved with a school IAQ management plan?



Indoor Air Quality (IAQ)

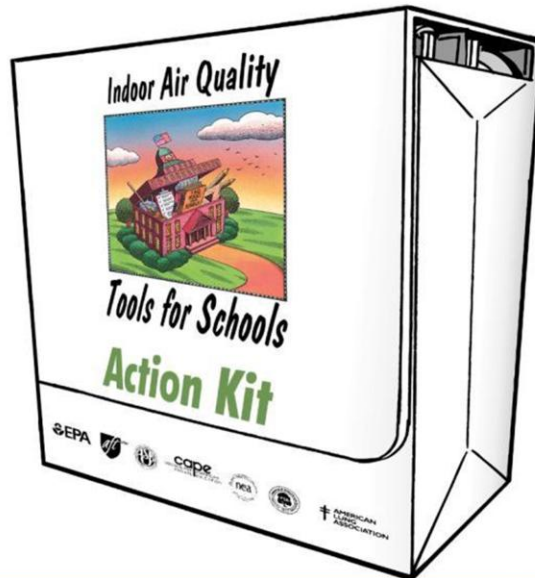
Brenda Doroski:

So one other polling question: we'd like to know if you're currently involved with the school indoor air quality management plan. So if you could take just a minute and let us know how familiar you are. By letting us know yes, you manage a school IAQ plan or maybe you partner with the school indoor air quality management team.

Okay, it looks like about 80 percent of the votes are in, we'll go ahead and close the poll. And it looks like about a third of you partner with the school indoor air quality management team, a third of you do not currently have an indoor air quality management program but you want to learn more, and a third of you are in schools or school districts that are not yet talking about indoor air quality.

So this is great, we've got some work cut out for us here, but we've got a good mix on the call, so thank you for taking that quick poll.

IAQ Tools for Schools



Indoor Air Quality (IAQ)

Brenda Doroski:

So I think we're ready to go ahead and jump in. I'd like to take a few minutes to review EPA's *Indoor Air Quality Tools for Schools* guidance and the resources that are available to you as you manage the indoor air quality in schools and your community.

Just to give you a little bit of background. The Action Kit was first published in 1995. It provides best practices, walkthrough checklists, industry guidelines, sample policies, and sample indoor air quality management plans to help schools and school districts take immediate action to implement effective indoor air quality management programs.

There's something for everyone in this kit. There's something for teachers, for school nurses, for facilities maintenance staff, for administrators, principals. It's really a comprehensive resource kit for you.

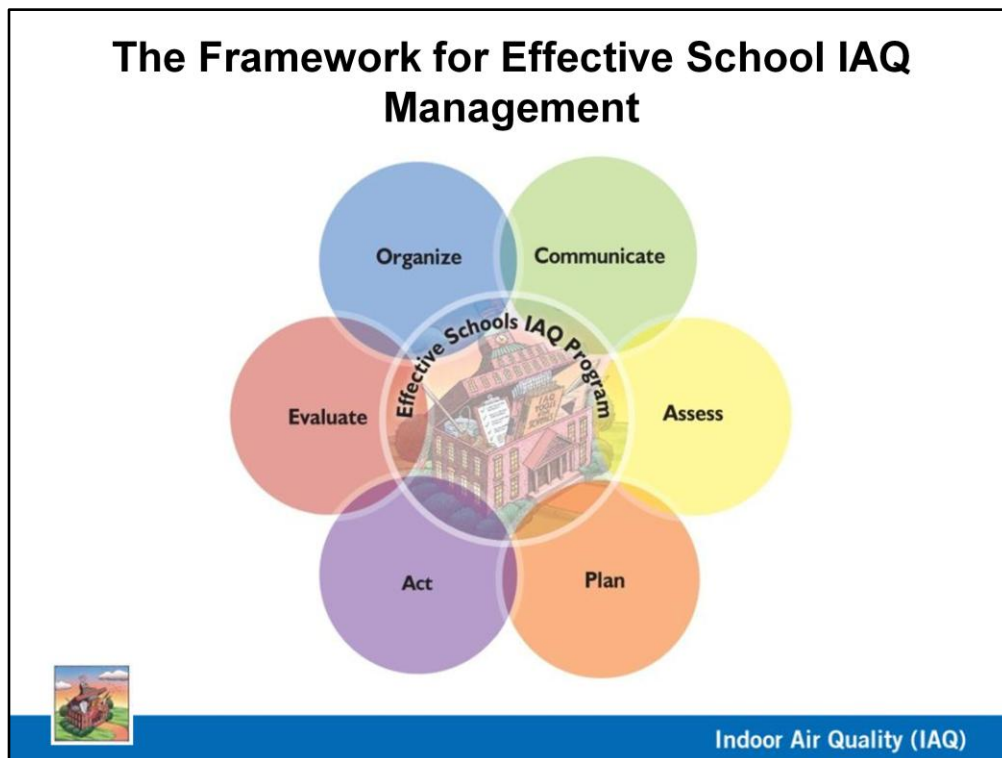
The *Indoor Air Quality Tools for Schools* Kit has been implemented successfully in about 40,000 schools across our country. We know this from the 2012 CDC study on school policies and practices, so we're really excited to have concrete data letting us know how many school across the country and school districts across the country have implemented this indoor air quality guidance.

However, we still have a long way to go, so we want to reach those remaining schools that have not yet developed an indoor air quality management program and, specifically, the topic of today's webinar is how do we reach those schools and tribal communities to make

sure that they're using the guidance and improving the indoor air quality in their schools.

So EPA has learned what it takes to create an indoor air quality program that delivers the remarkable health and environmental results school seek. And that includes improving the health outcomes of students and staff. So how do we reduce schools nurse visits, reduce asthma symptoms, reduce emergency medical service transports during the school day?

Second, we know that by using this proven guidance, we can improve academic performance and that includes increase yearly attendance averages and improve student performance. And finally, we know by using this guidance, we'll improve the actual school facility. We know we can provide cost and time savings for maintenance and custodial services and better performance and durability of their HVAC and other systems.



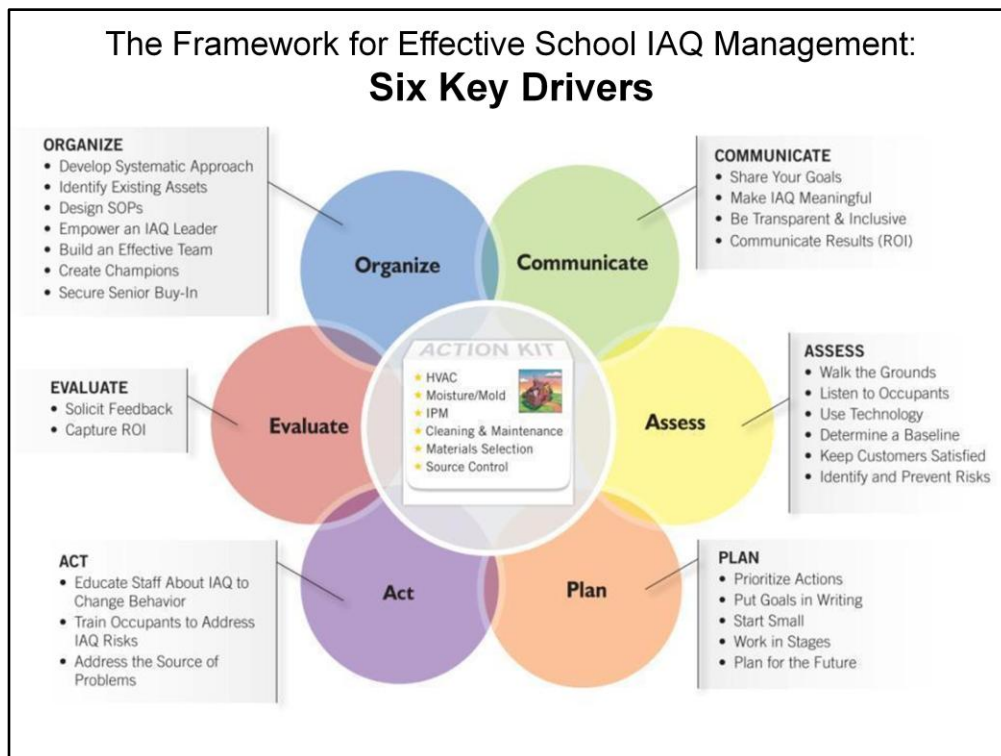
Brenda Doroski:

So EPA organized that knowledge into a framework of proven solutions called the framework for effective school indoor air quality management. We sometimes refer to this as the lifecycle of an IAQ management plan. The framework provides the common language to describe what drives indoor air quality program success.

It provides detailed guidance on the proven strategies, organizational approaches, and leadership styles that are fundamental to program effectiveness, and it presents a clear vision of the pathway to school IAQ excellence.

The framework is a highly flexible and adaptable structure that allows any school, regardless of location, site, budget, or condition, to use a framework to launch, reinvigorate, and sustain an effective indoor air quality management program.

We know that the framework can be used in rural schools, urban schools, schools in tribal communities, schools across the country. Today you'll hear about two programs who use the *IAQ Tools for Schools* Action Kit and framework to effectively work with schools in their tribal community.



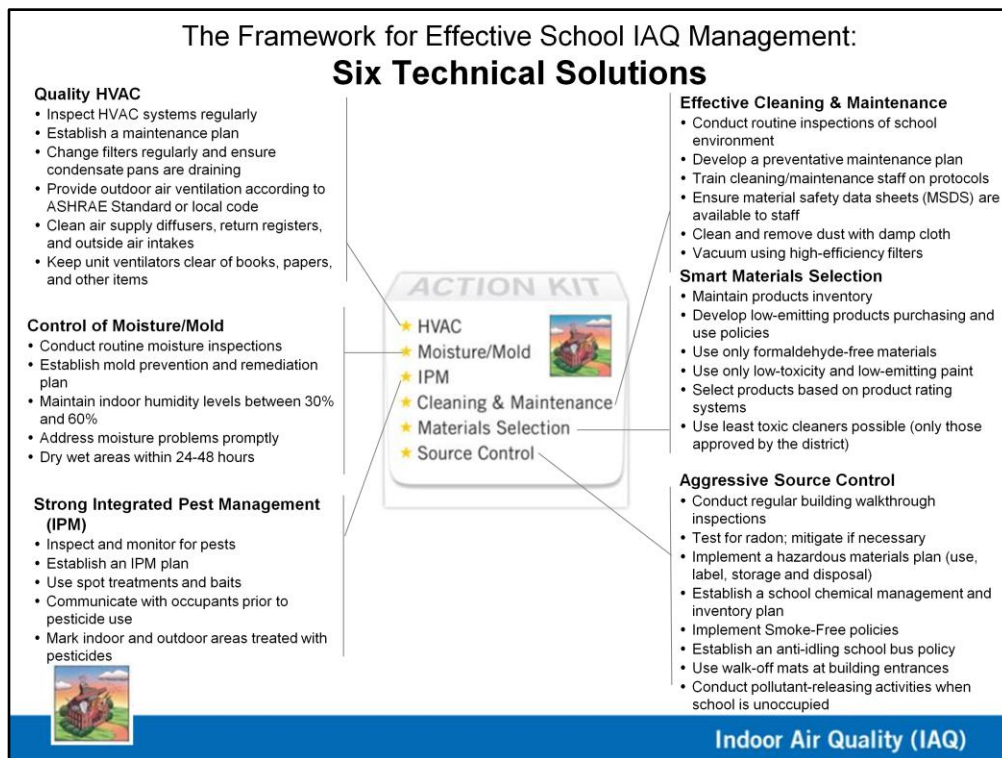
Brenda Doroski:

By applying a cycle of continuous assessment, planning, action, and evaluation, these six Key Drivers work together to deliver effective school IAQ management program. Protecting people from poor indoor air quality is why we do this work, but people are also at the root of each of these six technical elements.

The way in which we design, maintain, and interact with buildings impacts how buildings in turn affect the health and productivity of the building occupants. Therefore, people can be both part of the problem and part of the solution.

However, with education and tools such as the framework and the Action Kit, everyone can be a good steward of the indoor environment. So the six Key Drivers are: organizing a program, communicating with everyone all of the time; assessing your school IAQ environment and how occupants are doing continuously; planning your short- and long-term actions based on your assessments and other important factors; acting to solve or prevent IAQ problems and address structural, institutional, and behavioral issues; and evaluating your result and the impact of your program for continuous improvement.

You'll hear examples of these drivers from Scott and Johna in just a few minutes.

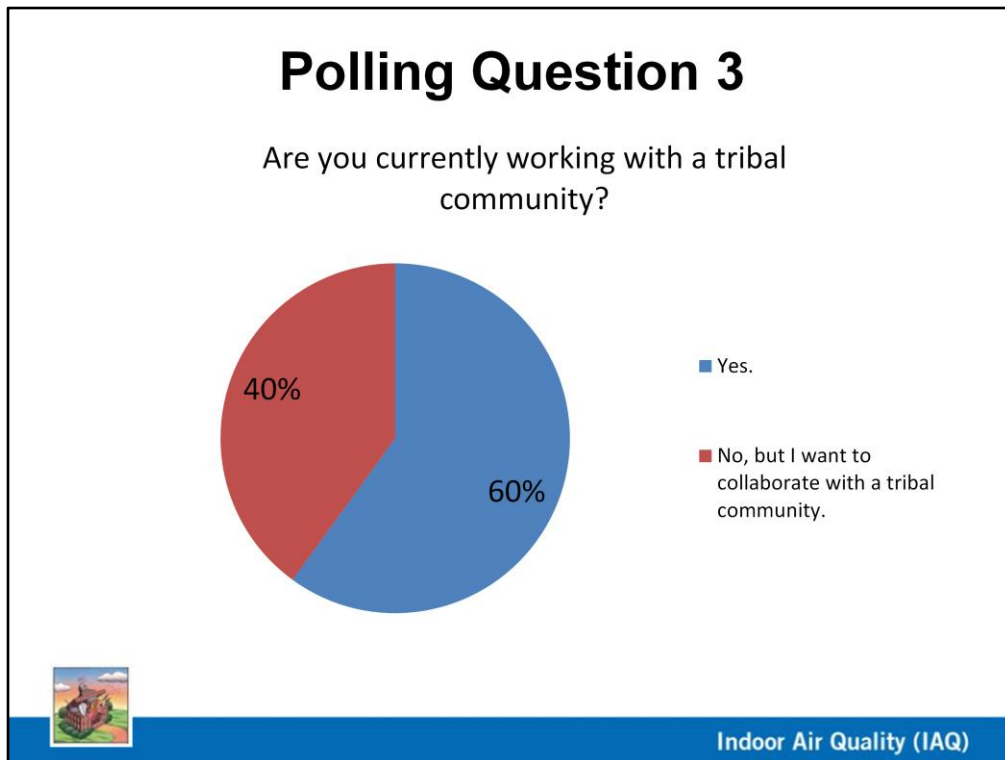


Brenda Doroski:

So in addition to the framework, the Action Kit offers six technical solutions. These are the key components for the comprehensive indoor air quality management plan.

So the first is ensuring quality inspection, operation, and maintenance of your HVAC system. The second is active aggressive control of moisture and mold. The third is the strong integrated pest management program. Fourth is an effective consistent cleaning and maintenance activities. Five is smart low-emitting low-toxicity material selection. And six is aggressive source control; for example, through anti-idling school bus policies, radon testing, or proactively managing your school's chemical inventory.

We're in the process now of adding a new technical solution: connecting and addressing energy efficiency and healthy indoor environments during school building upgrades. We'll be presenting more on that in 2014, and I'm really excited to be partnering with EPA's ENERGY STAR program to bring you this new guidance.



Brenda Doroski:

All right, we're going to transition now into our speakers. Before we do that, I want to ask a quick polling question. Are you currently working with a tribal community?

So this is our first webinar, kind of our first foray into doing that. Okay, I'm going to close the poll, and it looks like, I think it's about 60 percent of you are currently working with tribal communities so that's fantastic. That's exactly the target audience we were hoping to reach today, and about 40 percent of you are not yet collaborating with the tribal community. But we're hoping that with the information and the resources that you get today, you'll be better equipped to reach out and work with your tribal community.

So with that, I'm going to turn it over to Scott Weir, the Air Quality Coordinator for the Kickapoo Tribe in Kansas. Okay, Scott.



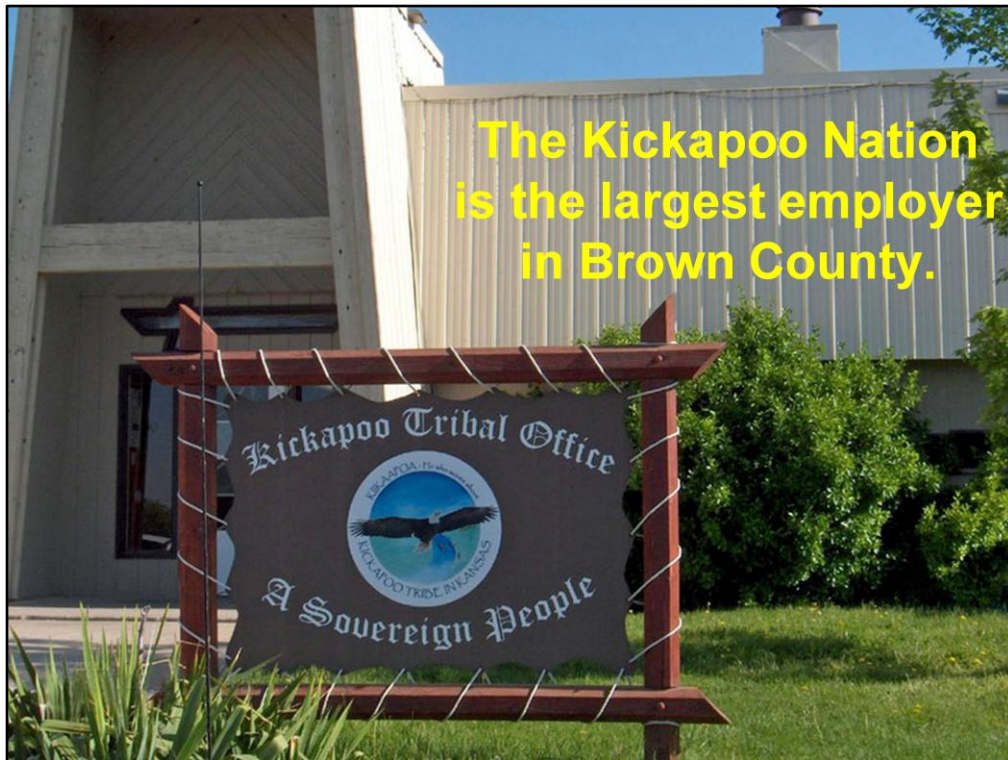
Scott Weir:

All right, thanks. Good morning. I'd like to thank EPA for offering me this opportunity to talk about what we've done here. And my first slide gives you an idea of what our reservation looks like. We're lucky enough to have some unbroken prairie. That's a stand of native grass and wild flowers and it's proof that I am an expert since I've been billed as one for this presentation: I'm out standing in the field.



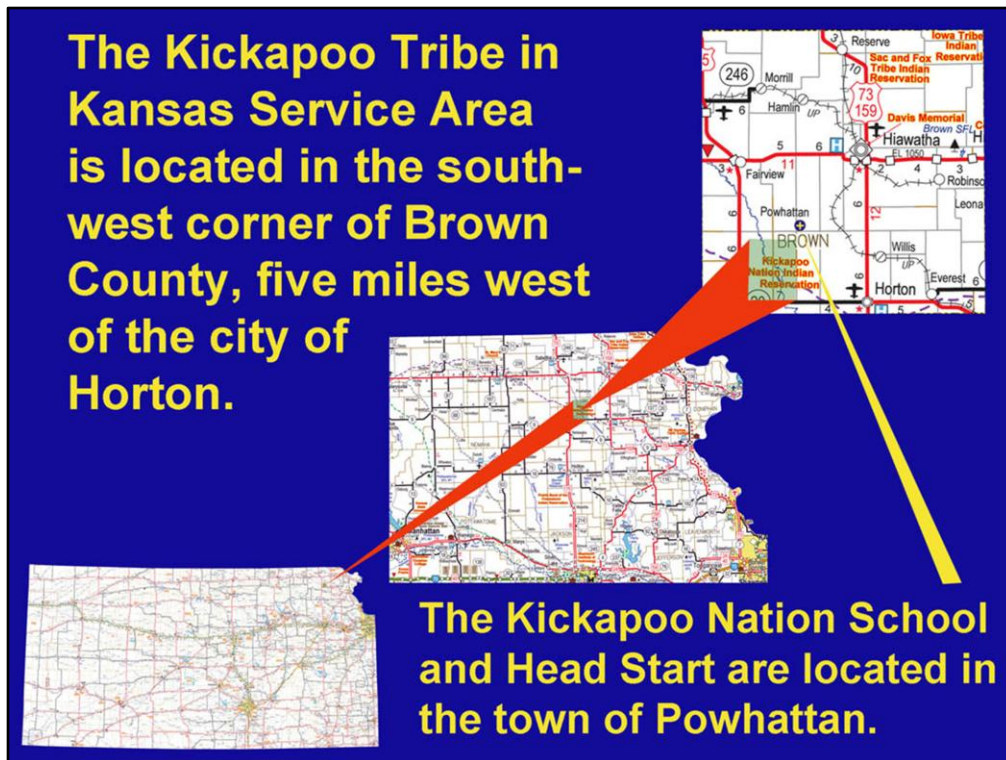
Scott Weir:

The Kickapoo Tribe in Kansas has been here since 1832. It is a federally recognized native sovereign nation. We have a service area that consists of tribal trust land, tribal fee land, and non-tribally owned land. The Kickapoo Tribal council is its official governing body.



Scott Weir:

The Kickapoo Nation is also the largest employer in Brown County, and it also operates Golden Eagle Casino. It is the largest employer in Brown County, either as the nation or as the casino. So when you combine both it is a very large economic benefit to Brown County, Kansas.



Scott Weir:

This map shows you where we're located. The Kickapoo Tribe in Kansas service area is located in the southwest corner of Brown County. We're five miles west of the City of Horton, which, there's still a BIA office there. It used to be called the Horton Agency.

The Kickapoo Nation School and Head Start are located in the town of Powhattan on a tribally owned school building on trust land just about a mile off the actual service area. Our service area is constituted of 30 square miles. Total tribal enrollment is 1,643, and there are 340 tribal members living within our 30-square-mile service area.

IEQ Background

In May 2013, Luke Gard of Children's Mercy Hospital (Kansas City, MO) presented a 2-day Safe and Healthy School Partnership workshop at the Kickapoo Nation School (KNS) in Powhattan, KS.



Indoor Air Quality (IAQ)

Scott Weir:

Okay, for the background on our IEQ, and I'm going to call this IEQ because when we did this assessment, it included safety components and a number of other environmental factors, so we look for hazards as well as just air quality issues.

In May 2013, Mr. Luke Guard from Children's Mercy Hospital gave us a two-day safe and healthy school partnership workshop. We presented that at the Kickapoo Nation School in Powhatan, and he used as a large, as the foundation for his presentation, he used the *IAQ Tools for Schools* information.

IEQ Background

The workshop was attended by one person from EPA Region VII, two Kickapoo Environmental Office Staff, two Kickapoo Head Start staff and the Maintenance Supervisor of KNS.



Indoor Air Quality (IAQ)

Scott Weir:

The workshop was attended by one person from Region 7, an EPA staffer; two Kickapoo environmental office staff; two Kickapoo Head Start staff; and a maintenance supervisor from the Kickapoo Nation School.

Workshop Goals

- 1) Heighten awareness of Indoor Environmental Quality (IEQ) and the importance of a healthy learning environment.
- 2) Enable staff to evaluate design, maintenance and operation of buildings to optimize IEQ.



Indoor Air Quality (IAQ)

Scott Weir:

The goals of the workshop were to heighten awareness of indoor environmental quality and the importance of a healthy learning environment, and also to basically demonstrate to staff how to evaluate design, maintenance, and operation of buildings to optimize indoor environmental quality.

IAQ Management Actions

The workshop was divided into two parts:

- 1) A classroom session was conducted on May 21st.
- 2) Practical assessments (walk-throughs) of KNS and the Head Start facility were performed on May 22nd.



Indoor Air Quality (IAQ)

Scott Weir:

The management actions that we took would basically, we broke this down into two parts: first was a classroom session conducted on May 21 and then practical assessments, actual walkthroughs of both the Kickapoo Nation School and the Head Start facility, were performed the next day.

IAQ Management Actions

- The classroom session included skills-based training focused on:
 - Basic building science;
 - Healthy schools fundamentals; and
 - Use of basic assessment tools.



Indoor Air Quality (IAQ)

Scott Weir:

The classroom session included skills-based training focus on basic building science, fundamentals of healthy schools, and use of the assessment tools.

IAQ Management Actions

- Walk-throughs provided practical experience for facility assessments and emphasized the connection between the condition of a facility and the health of the occupants.



Indoor Air Quality (IAQ)

Scott Weir:

The walkthroughs provided practical experience for assessments of the facilities, and they emphasize the connection between the condition of our facility and the health of the occupants. And that's the key to indoor environmental quality and the indoor air quality specifically is the health of the building affects the health of the people who inhabit that building.

Challenges

Principals of the Horton, KS Public Schools (elementary, middle school and high school) were contacted. All expressed interest in sending at least one maintenance staff member...

but due to an in-service day, the Superintendent of the Horton School District would not permit their attendance.



Indoor Air Quality (IAQ)

Scott Weir:

Challenges: We reached out to the Horton, Kansas, schools just five miles away, visited with the principals of the elementary, the middle school, and the high school. They all expressed their sincere interest in sending at least one maintenance staff member, but due to an in-service day, the Superintendent of the Horton school district would not permit them to attend.



Scott Weir:

The Kickapoo Nation School is comprised of two sections; an old wing built in the 1960s that used to be just the Powhatan School and the new wing which is scope in 2012. The picture on this slide, the right side of the building is the old wing and the left side, that's red brick, is the new wing.



Scott Weir:
Little about the old wing.

Results

- The old wing of KNS was found to be in good shape for its age:
 - There were no active roof leaks.
 - No excess humidity in classrooms.
 - Only a very small amount of mold was found in one rest room.
 - Classrooms are carpeted, and the carpet is dirty and worn.
 - Some teachers use air fresheners.



Indoor Air Quality (IAQ)

Scott Weir:

The old wing of the school was found to be in good shape for its age. There were no active roof leaks, no excess humidity was found in any of the classrooms, a very small amount of mold was found in one of the restrooms. The classrooms are carpeted, and the carpet is dirty and worn and simply needs to be taken out or replaced but they're vacuumed regularly and it's just that they're worn and stained.

There was very little effect on indoor quality that we could note from that. Some teachers insist on using air fresheners, and we have a goal of communicating with them in the near future about the fact that that might actually contribute to problems more than health problems.



Scott Weir:
Now for the new wing.

Results: Walk-through Findings

- The New Wing of KNS had two minor issues:
 - Several active roof leaks where new addition attaches to old wing (repair was already pending).
 - Heating pipes in new boiler room were not completely insulated (causing loss of heat into boiler room).



Indoor Air Quality (IAQ)

Scott Weir:

Results from our walkthrough findings. The new wing of the new Kickapoo Nation School actually did have two minor issues. There were several active roof leaks where the new addition is attached to the old wing, and that repair was already pending. They were negotiating with the contractor at the time of the inspection.

And there are two boiler rooms in the school, in the old section and the new section, and the heating pipes in one of the boiler rooms were not completely insulated, causing a loss of heat into the boiler room, which was kind of odd because they have upgraded the old boiler room to match the new boiler room, and one boiler room had adequate insulation and the other one did not. So we don't know whether, yet, whether that was an oversight during construction, but it will eventually be addressed.



Scott Weir:

Okay, we also did a walkthrough the Kickapoo Head Start. It's the next slide. It's a building that has a design that was just based on a ranch house, regular residential home design.

Results: Walk-through Findings

- The Kickapoo Head Start facility is based on a house design with a large basement which is used for storage.
 - No major issues were detected.
 - Two exterior stairwell drains were covered with leaves.
 - One of two sump pumps was known to be malfunctioning.



Indoor Air Quality (IAQ)

Scott Weir:

Our findings of that walkthrough. It has basically a full basement that is used for storage. We did not detect any major issues, but we did find that two exterior stairwell drains were covered with leaves and one of its two sump pumps—there's a sump pump at each end of the basement—one was known to be malfunctioning. And the problem rose soon after one week later, we had heavy rains that fell for two days.



Scott Weir:

And the exterior stairwell drains are not yet been cleaned, and they were blocked and both sump pumps failed. Head Start facility basement was flooded. It had about four inches of water standing in the lower parts and two inches in the higher parts of the floor.

Results: A Problem Arises

- The exterior stairwell drains had not yet been cleaned, and they were blocked.
- Both sump pumps failed.
- The Head Start facility basement was flooded to a depth of 2 to 4 inches.



Indoor Air Quality (IAQ)

Scott Weir:

We had a rapid response was made by the Kickapoo Fire Department, tribal properties maintenance staff, and the environmental office. This minimized damage. We were up there. We start work as early as seven in the morning and people came into work and went right up there and started cleaning up.

Results: Interdepartmental Response

- Rapid response by the Kickapoo Fire Department, Tribal properties maintenance staff and the Environmental Office minimized damage.
 - Fire Department pumped out water and installed heavy duty fans.
 - Maintenance and Environmental staff swept remaining water to floor drains.
 - The sump pumps were repaired.
 - A dehumidifier was installed.



Indoor Air Quality (IAQ)

Scott Weir:

The fire department pumped out water and installed heavy duty fans to get things dried out as rapidly as possible. Maintenance and environmental staff swept the remaining water that couldn't be pumped out. We swept to the floor drains, which were working, thank goodness, in the basement. The sump pumps were repaired, and a dehumidifier was installed. And that was all within 24 hours.

Results: Mitigation

- Only a few small areas became moldy.
 - All damp paper and cardboard were discarded.
 - Damp sheetrock was dried with fans.
 - Moldy areas were thoroughly cleaned.
 - Operation of dehumidifier and sump pumps is now periodically checked.

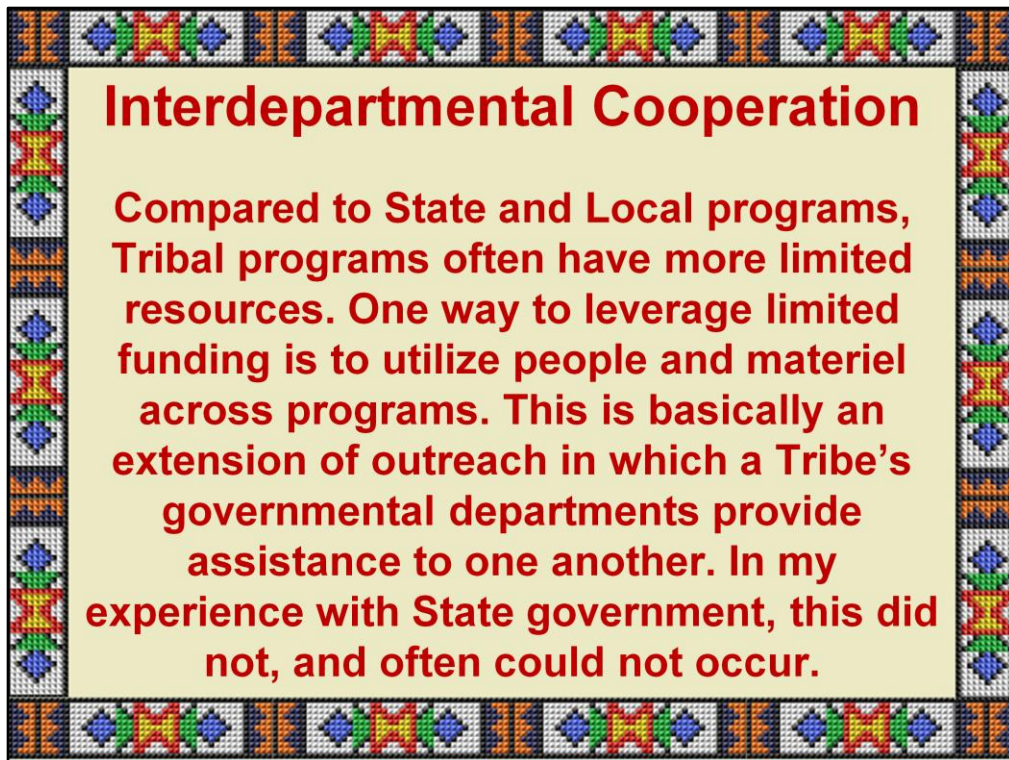


Indoor Air Quality (IAQ)

Scott Weir:

Only a few small areas became moldy. All that paper and cardboard were discarded immediately. The Head Start staff started going through things and discarding anything that was not salvageable or that presented a potential problem for mold later on.

Damp sheetrock was dried with fans. Moldy areas were then thoroughly cleaned. That, of course, came a little bit later. And operation of the dehumidifier and sump pumps is now periodically checked.



Scott Weir:

Interdepartmental cooperation. We utilize this a lot here at the Kickapoo Nation. Compared to state and local programs, many tribal programs often have more limited resources, and one way to leverage limited funding is to utilize people and materiel across the programs.

It's basically an extension of outreach, that's how we regard it, in which the tribe's governmental departments to provide assistance to one another. This is much different from my experience with state government where it only rarely happened, usually with some kind of interdepartmental directive from the governor's office or the legislator, and in many cases it just often cannot occur. There's no communication between state departments of government.

Interdepartmental Cooperation

- The Head Start flood response provides an example of the value of interdepartmental cooperation. Other examples include:
 - presentations on IEQ and asthma triggers with the Housing Authority; and
 - Coordination of Energy Audit of KNS and Safe and Healthy Schools training with KNS and Head Start.
- The Kickapoo Environmental Department motto is *“Working together for a better community.”*



Indoor Air Quality (IAQ)

Scott Weir:

The Head Start flood response provides as an example of the value of this cooperation. Other examples include presentations that we make to, on indoor environmental quality and asthma triggers, to the housing authority. We actually give presentations both to the housing authority and to the tenants of tribal housing.

And another example was the coordination of the safe and healthy schools training for Kickapoo Nation and Head Start. And earlier, about a year or before that, we had actually also done an energy audit at the Kickapoo Nation School. The Kickapoo environmental department's motto is “working together for a better community.”

Next Steps

- Follow-up with KNS maintenance supervisor on status of roof repairs.
- Communicate with teachers regarding use of air fresheners.
- Communicate with parents regarding IEQ in facilities.
- Continue to assure that Head Start drains, sump pumps and dehumidifier are operating.



Indoor Air Quality (IAQ)

Scott Weir:

And that, the spirit of cooperation, allows us to pull staff and to share our basic resources. Now the next steps that we have are to follow up with the Kickapoo Nation School maintenance supervisor on the status of the roof repairs. We just have not found out whether they have completed those repairs to everyone's satisfaction.

We need to communicate with teachers regarding their use of air fresheners, basically if they... We did not find any unusual odors in the school on the walkthrough, and I know some teachers probably have problems with stale air in their classrooms and they think the air fresheners help. But those can serve as real, or be problematic for children with respiratory problems, and particularly they can serve as asthma triggers.

We have an effort underway to communicate with parents regarding the indoor environmental quality in their facilities, and we'll continue to assure that the Head Start drains sump pumps and dehumidifier are operating.

Opportunities for Communication

- Presentations to Housing Authority residents
- Winterization and IEQ information booth at KNS Parent/Teacher conferences
- Health Fairs at KTIK and Sac and Fox Nation of Missouri
- Earth Day events at KTIK and Sac and Fox Nation of Missouri
- Environmental education at Head Start and KNS



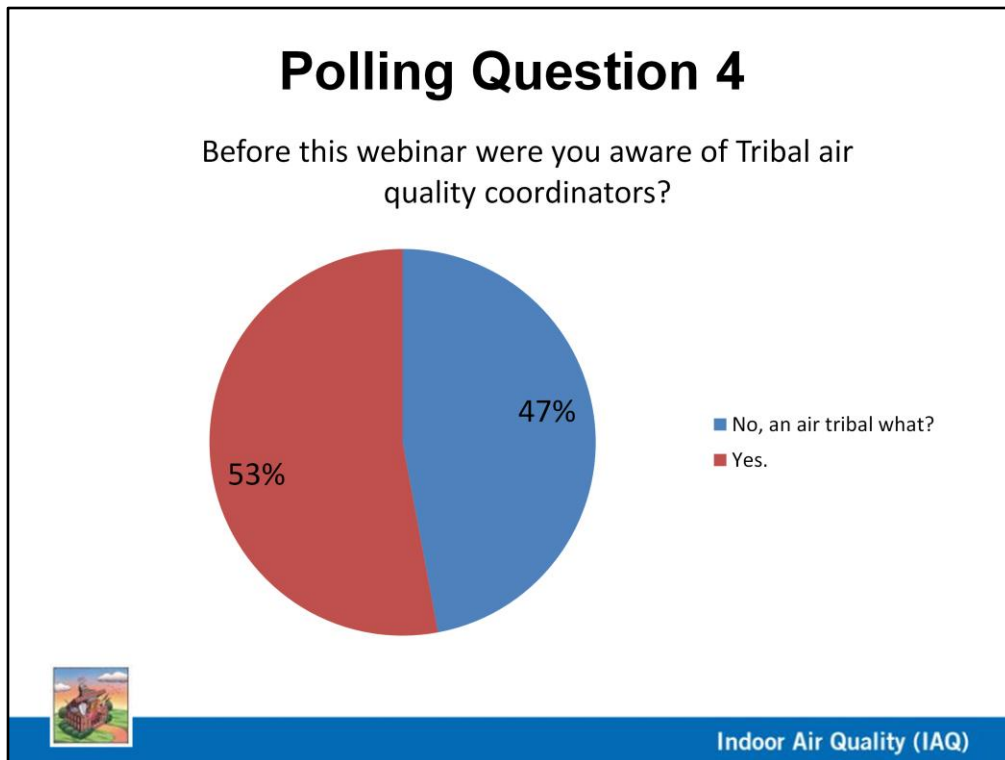
Indoor Air Quality (IAQ)

Scott Weir:

We have many opportunities for communication in the Kickapoo Nation. As I've said, we make regular presentations to housing authority residents. We have set up a booth at parent teacher conferences in the Kickapoo Nation school to discuss winterization, indoor environmental quality, and asthma triggers.

There are health fairs held both at the Kickapoo Tribe and also at the Sac and Fox Nation of Missouri, which is about 30 miles away, and we routinely attend each other's health fairs. We also have our own Earth Day events and, when they do not follow on the same day, we generally attend each other's Earth Day events as well.

We also have begun conducting environmental education at the Head Start level and also are cultivating opportunities at the Kickapoo Nation School. And that concludes my presentation.



Brenda Doroski:

Thank you so much, Scott, that was terrific. It was great to hear the rapid response to the flooding. I think that's a great example for others on the call, something that happens all across the country, and you guys did a phenomenal job of responding to that.

Great also to hear some of the challenges, you know, the best way plans can be spoiled by a scheduling conflict and you ran into that, but you were able to proceed and move on and continue with your work. And a lot of that was done through your examples that you gave from the interdepartmental cooperation, so those are great examples and great motivation for others who are interested in working with the tribal offices.

So thank you for sharing that. I think very inspiring to hear the work you're doing with the housing authorities, the schools, the Head Starts, and I think there's a lot there that we can build on.

So I'm going to ask a polling question here to see from the audience: before this webinar, were you aware of tribal air quality coordinators? So yes or no, an air tribal what?

It looks like about 60, no, 50 percent of you were already aware of tribal air quality coordinators, so that's great news and about, again 50, were not, so I think that we've got a great introduction here from Scott and going to have a similar introduction now from Johna Boulafentis, who I think will be inspiring us with her work and her program as well.

So with that, Johna, I'm going to go ahead and turn it over to you.



Nez Perce Tribe ERWM Air Quality Program

Johna Boulafentis
Environmental Outreach Specialist



Indoor Air Quality (IAQ)

Johna Boulafentis:

Okay, great, thanks, Brenda. Thanks, everyone, for joining and thank you, EPA, for having me here with you today. Just to give you a little bit of a background, our office received EPA funding and the main duty of the Nez Perce Tribe Air Quality Program is to oversee outdoor air quality and burning on the Nez Perce education.

We also have a grant for outreach and education projects, including indoor air quality in working school districts, which I'll talk to you about today. I've been working kind of—more details about that—is I've been working on IAQ issues since 2005 and, over the years, I've added on to what I do.

I was trained by Rich Prill, who is an IAQ specialist and just recently retired from Washington State University. And Rich and I conducted over 50 walkthroughs of Nez Perce Tribal administration building together.

I've also worked with Rich Prill and Jim Spouse, who is with Idaho Department of Health and Welfare, when they conducted school walkthroughs in my area. And, lastly, I've received training from Mansel Nelson with the Institute of Tribal Environmental Professionals, who I'll talk more about today.

An overarching kind of related to this theme that Scott mentioned is the importance of creating and sustaining partnerships. Nurturing long-term relationships has really benefited my program and I appreciate the opportunity to tell you about some of this work.



Johna Boulafentis:

This graphic on the left-hand corner shows the five reservations in the State of Idaho. It's important to note that the treaties in 1855 and in 1863 resulted in the Nez Perce reservation. Nez Perce aboriginal lands are 13 million acres including portions of Washington, Oregon, Idaho, and Montana, where the Nez Perce have hunted and fished since time immemorial.

The current Nez Perce reservation is located in North Central Idaho that you can see, and we're located along Clearwater River and there's river valleys and plateaus and the prairie. Our reservation is about 760,000 acres and 1,200 square miles, and it covers sections of five different counties.

We are predominantly agricultural on the prairie with wheat, and we have forested lands as well. And the total reservation population is around 18,000, of which only nine percent, 1,600, are tribal members. And the tribe or its members own 12 percent of the reservation.

Background

- Building a long term relationship with a school district
- Reaching out to a School Health Council



Indoor Air Quality (IAQ)

Johna Boulafentis:

Okay, to give you a little bit of background of how I got involved with the school, I'll let you know that [on] the Nez Perce reservation there are seven state school districts. Our school districts are not tribal schools but rather state-run facilities that serve native students. This is important to note because it goes back to the two previous slides: tribal and non-tribal people living on the reservation. And when Jim Spouse from State of Idaho had funding for school IAQ and visited schools on the reservation, he partnered with our office.

To go back through a background directly related to my experience, in 2011 our program was looking to build a long-term relationship with the school district in two areas: science education, you can see from the top left picture, and indoor air quality.

That year, I began working monthly with two sixth-grade science classes, and I spent a year building that relationship and then approached the school district's school health council in 2012.

To give you a little background about school health councils, a few years before, some other tribal organizations or programs— Students for Success program and the tribe's health agency, Nimiipuu Health — received a CDC grant to help four school districts implement health councils.

Each council is a little different at each school but typically they focus on nutrition and physical activity. Members include teachers, staff, coaches, school nurses, and Nimiipuu

Health and Students for Success employees. And the school health council I worked with also has parents and students.

And I learned from our Nimiipuu office staff that schools have to meet state health requirements including asthma, and there are school health surveys and profiles that the administration must complete, and the school I selected to work with was identified as having a dedicated health council but with scoring low on the asthma-related health questions. So this is kind of my “in” for indoor air.

Our Goal

- Assist school district in addressing asthma requirements
 - Share IAQ and asthma resources.
 - Conduct an indoor air quality walk-through.
 - Create a school-wide asthma management plan.
 - Hold an asthma training/refreshers for teachers.



Indoor Air Quality (IAQ)



Johna Boulafentis:



I should also mention that in the past I attended an *IAQ Tools for Schools* symposium in a national asthma forum, and both of these experiences helped build my knowledge and confidence in working closely with the school in IAQ and asthma.

And working with the school, I met with the councils, as I mentioned, and came in with the approach of I have information, resources that I can share with you if you like. I can try to help you to meet some of your asthma needs and I have an IAQ specialist who can come here to do an assessment. And they were interested so I went with it.

So you can see the main goal is just to assist the school district in addressing asthma requirements. And during conversation over the school year, it became clear what objectives were needed to accomplish this goal. So you can see, you know, I wanted to share IAQ and asthma resources, conduct a walkthrough; it came out during school working with school nurse that the school-wide asthma management plan would be a good idea and lastly a training for teachers.

IAQ Management Actions

Indoor Air Quality (IAQ)

Johna Boulafentis:

So [in] the next two slides, I'll show pictures representing the key drivers related to the indoor air quality walkthrough. After the school health council expressed interest, I contacted Mansel Nelson—again, from the Institute of Tribal Environmental Professionals of Northern Arizona University—and I asked him to help me assess the elementary, middle, and high schools in teaching classes.

He's a great partner for tribes working on a IAQ as he has funding for outreach and education. He agreed, and the school health council work with the administration to have it approved. Over the fair amount of pre-visit planning and communicating as we planned for a four-day visit with the school district.

In order to build trust with Mansel, we had a pre-visit planning conference call with the school health council members to ask questions and hear more about the process. We also had a conference call with just him, the school nurse, and the school health council coordinator. Mansel also sent a letter and IAQ fact sheet to the principals. The school health council shared this fact sheet during school health council – school staff meetings, and this step was especially helpful because it helped us gather IAQ concerns before the visit.



We also worked with the coordinator, the school health council coordinator, and the school maintenance supervisor. And lastly I always tell people to plan for hesitancy or nervousness. As many of you on this call may know, this will happen before, during, and

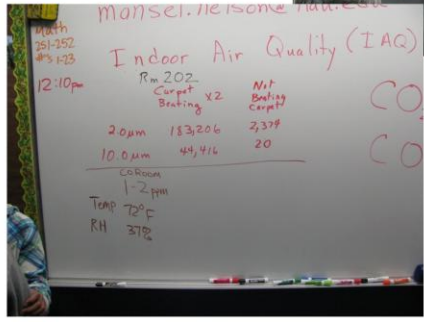
after the assessment. So we constantly are reminding them that the walkthrough is meant to help them as a school district, and it's their data, and it's just supposed to be helpful.


During the assessment, we listened and investigated. And in most of my IAQ experiences this was concluded: the people who are in the building everyday already know the problems. It helped for them to have an outside third-party person help investigate this concerns. In many instances you don't need a lot of equipment, just an openness to get dirty and look around.

And we also used Mansel's visit as a teaching opportunity for the sixth-grade science classes. You can see in this photo on the slide that the kids are holding some equipment. So they were trained on the equipment and completed data sheets for some of the classrooms in the middle school. And then Mansel and I assessed the rest of the middle school, the elementary, and the high school. And then the top left photo is Mansel meeting with the school health council.

IAQ Management Actions




Indoor Air Quality (IAQ)

Johna Boulafentis:

So, continuing on, connecting it back to the key drivers, we did our best to involve staff and during the visit, the school maintenance supervisor participated in some of the walkthroughs. It was important to have him involved especially as building occupants brought up issues.

We also spoke with the school custodians about their cleaning practices. And, lastly, throughout the assessments, we answered questions as they come up. We interacted with teachers and students if they expressed interest.

And the main issues were ventilation and exhaust fans. The picture on the top right is a good example of action taken. The cook and kitchen staff said moisture ran down walls, and we identified mold growing around a door frame. They also told us the dishwasher exhaust fan hadn't work in years, and they're opening a door and trying their best to keep it dry.

The next day after hearing this concern, the maintenance supervisor got on the roof, removed the motor, ordered the parts, and was fixing it. So immediately while we're there, we see action being taken, which was a really great experience. And then at the following month's school health council meeting, the head cook told me that the fan worked great and there were no moisture problems.

Another action that was taken in a few classrooms that had concerns of stuffiness and our

equipment showed high readings of CO₂. The maintenance person ended up calling an HVAC company and they worked on adjusting the outdoor air controls. And the other issues included carpeting and walk-off and cleaners.

So at the end of the four days, we shared the findings with the school health council and gave a report of what we found and we also met with the elementary middle school principals and also with the school maintenance person.

Communication

- School Health Council
- School Nurse
- Maintenance/Custodians
- Administration
- Teachers
- Students



Indoor Air Quality (IAQ)

Johna Boulafentis:

So communication, a big part of all of these tasks, and just as a summary, we communicated with many groups before, during, and after the assessment. This picture shows Mansel teaching third graders about what an asthma attack feels like by breathing through a coffee stirrer.

And as again we can iterate, we communicated with the school health council, the school nurse, maintenance, administration, teachers, and students.

And it was really important when helping with the asthma plans. I had a few meetings, many phone calls, and shared emails with the school nurse while she drafted the school-wide asthma management plan. And I also helped her find a template of an asthma action plan that she can use with individual asthmatic students at the school.

And I also attended the school health council meetings monthly and emailed regularly with school health council coordinator. Similar to Scott and the Kickapoo Nation, there are other opportunities for me to do outreach about indoor air quality, not just in schools but in homes as well.

And so, there're tribal health fairs, we also partner pretty closely with our tribal housing authority, and we hold classes on green cleaning, mold, and energy efficiency.

Results

- Connected people and shared resources
- Increased IAQ and asthma awareness
- Conducted IAQ assessment
- Maintenance acted quickly on problem areas
- Developed asthma management plan



Indoor Air Quality (IAQ)

Johna Boulafentis:

So, some great results from this experience connecting people and sharing resources. We work with Nimiipuu Health, my office, the school district, along with ITEP and people within their own school. You've got people asking questions. Does school health council share the draft in the school wide asthma plan with their maintenance supervisor. They discuss things like who do occupants share IAQ concerns with. And they also got thinking about their asthmatic students and requirement.

Next Steps

- Continue momentum of last year
- Hold an asthma training/refreshers for teachers
- Encourage a transition to more green cleaning products
- Approach another school district about IAQ and asthma



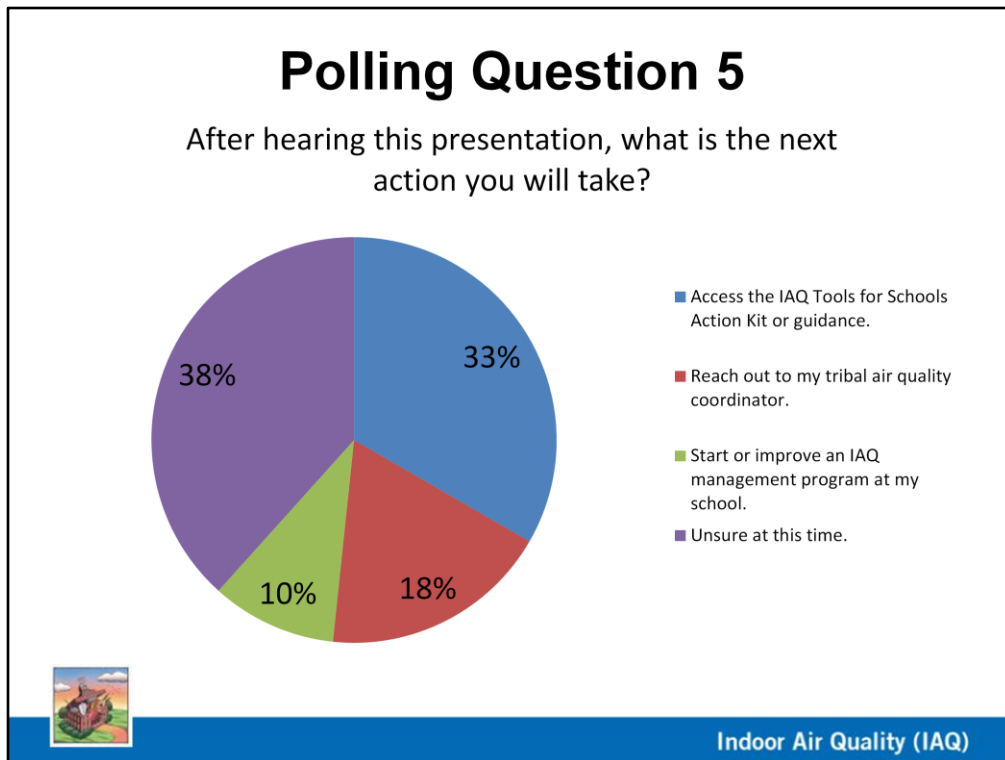
Indoor Air Quality (IAQ)

Johna Boulafentis:

So next steps, we would like to continue the momentum of last year. There's been a lot of changes with at the school district this year. The school health council just meet last week for the first time this school year, and also the school nurse just left in November. So I'll be meeting to work with the new nurse, and I would also like to encourage them to have the school-wide management plan adopted by the school board.

We also like to hold the asthma training; it wasn't able to happen last year so we would like to make it happen this year. And I would like to encourage a transition to more green cleaning products. There were a number of chemicals throughout the school. We talked about with this with the maintenance supervisor and a custodian and the school health council, so hopefully that will gain some momentum.

And lastly, I would like to approach another school district about IAQ and asthma. So thanks for your time. And that concludes my part.



Brenda Doroski:

Terrific, thank you so much, Johna. Especially like the example of the CDC-funded school health council, I think that might be new information for folks. It is a great example of collaboration with the school nurse to address asthma and indoor air quality in schools. We've also – Johna, it was great to hear how you use the framework to implement your indoor air quality management program and to get immediate action, so all of it was terrific, thank you so much.

You've heard two examples now of using the *Indoor Air Quality Tools for Schools* guidance and resources to create healthy indoor environments in tribal communities. And before we open it up to your questions, just want to ask a polling question to see, after hearing this presentation, what is the next action you will take?

Looks like about a third of you are going to access the Indoor Air Quality Tools for Schools Action Kit and guidance, so maybe this is new to you. We're really happy to been able to introduce you to this today.

About 10 percent of you are going to start or improve an indoor air quality management program at your schools, so you're ready to get started. And about 20 percent of you were going to reach out to your tribal air quality coordinators, so that is actually – yes, 20 percent, so that's terrific.

Guidance Materials

- *IAQ Tools for Schools* website: <http://epa.gov/iaq/schools/>
- *IAQ Tools for Schools* Action Kit: <http://epa.gov/iaq/schools/actionkit.html>
- *IAQ Tribal Partners Program, Programs in Schools*: <http://www.epa.gov/iaqtribal/schoolprogs.html>
- EPA's American Indian Environmental Office: <http://epa.gov/tribal/>
- EPA's Tribal Contacts: <http://epa.gov/tribal//contactinfo/index.htm>
- Bureau of Indian Affairs: <http://www.bia.gov>



Indoor Air Quality (IAQ)

Brenda Doroski:

For those of you that are still unsure, we look forward to hearing from you what else you might need from us, how we can help you and help direct you to the resources that are available and get you started on creating healthy indoor environments in your community.

I wanted to share with you now some of the materials that are available on EPA's website. So we have the *Indoor Air Quality Tools for Schools* website with the Action Kit, the framework. We also have an Indoor Air Quality Tribal Partners Program and you can go and see what some of these programs are doing. And we have an EPA American Indian Environmental Office.

If you go to the website, shows you some of the other EPA programs that are working with tribal communities and a list of tribal contacts. So if you want to reach out and broaden those folks that you might be working with.

And these resources are also in the chat box on the side of your, in your console, so you can copy and paste these links into a document on your screen, on your computer. We'll also be making this available at the end, but if you want to get some of these links copied and pasted now, you can do that.

Finally we've listed here the Bureau of Indian Affairs, which also provides a resources training and services that you might be interested in.

Questions and Answers

Please use the questions/chat pane on your webinar console to send us your questions.

We will answer as many questions as possible and post answers to any remaining questions with the webinar proceedings at www.epa.gov/iaq/schools/webconferences.html.



Indoor Air Quality (IAQ)

Brenda Doroski:

Okay, so we are going to open, I think we're going to go ahead and open it up now for questions and answers, if you can go to the next slide. Please use the questions chat pane on your webinar console to send us your questions and, as you typed them in, I will read them out for Scott and/or Johna to be able to answer.

If we don't have time to answer all of the questions today, don't worry, we'll capture all of them in writing. We'll send them to Scott and Johna, who will respond to them, and then we'll post the questions and answer on our websites. So we'll answer as many questions as possible and then post the remaining questions with [the] proceedings.

So, Scott, I have a question here for you from New York. It says in New York post-Hurricane Sandy, the damp sheetrock was removed rather than dried. Is there a concern about mold growth on the back side of the sheetrock and the wall studs.

That's a little technical, not sure if that's the question that you can address on.

Scott Weir:

Sure. Big difference between a couple inches of water in the basement in a basement that's normally been dry and what Hurricane Sandy did. We're talking on these, just a lower two to four inches of the sheetrock had wicked some water up and we got that dried fairly well.

They're actually, in most of the areas that were really affected, there was either lose or no baseboard material. It's only kind of like partially finished. And so we got pretty good, we feel like we got pretty good air flow under it.

But with actual flooding and extensive water damage, replacement is a given. Yeah, always, when it goes beyond a certain square footage and there's potential for growth of mold inside the walls, you definitely need to take sheetrock down and basically gut the building and start over.

It's in this case it's really a question of scale. Ours was – it was a disaster to the Head Start program because they did lose some, like plush toys and things like that, they just had to get rid of. But it was nothing on the scale of the kind of damage that's done in a situation like with Sandy.

Hope that answers the question.

Brenda Doroski:

Terrific, thanks, Scott. I have another question for you, Scott, before – since I got you on right now.

Scott Weir:

Okay.

Brenda Doroski:

The question was did you use any carbon dioxide monitoring equipment when you did your walkthrough?

Scott Weir:

The answer to that is no, we did not have any. It's something that is truly a consideration because like, as Johna pointed that out in one case, and we have done that in the past when I was with the state on a few occasions. The use of the carbon dioxide monitor will tell you whether or not you have ventilation problems and particularly in classroom that's an issue because if you have between 10 and 30 people in the classroom and they're in there for hours, there's an awful lot of build up of CO₂ if there – if the number of air exchanges in the room are inadequate.

So it's a good idea but we just did not – Mr. Guard did not have a meter and we don't have access to one. So no we did not use a CO₂ monitor.

Brenda Doroski:

Terrific, thanks, Scott. Johna, I have a question for you now. When you were planning your indoor air quality work and your walkthrough, did you receive any opposition on the importance of indoor air quality from school maintenance staff? I know you talked a lot

about how you worked with the school for a year, you built the relationship with the school nurse, and I think this was part of the larger program that you were doing with education and asthma management. What was the reaction you received from the school maintenance staff?

Johna Boulafentis:

Sure, that's a really good question. I think at first he was kind of nervous, especially as school maintenance staff see the building, well, most people in a school see the building as theirs. Everyone has the ownership of it.

But being the person that feels responsible for the upkeep, I think he was kind of nervous but when he walked around with us and saw our approach was easygoing and again reminding him that we're just here to help. I think he felt more relaxed. He was also new to the school district so that could have been contributing to the nervousness. But like I said, when we went into the kitchen and saw these problem areas and heard back from the cooks and the staff and then he easily got on it, I think his comfortability grew.

Brenda Doroski:

Terrific, thank you. Johna, also for you, did you develop any resource posters, other type of educational materials, or did you find education materials like posters and things like that outside of the Indoor Air Quality Tools for Schools Kit, which includes a lot of the checklist and walkthrough guidance? But were there other resources that you encountered perhaps specific to tribal communities or that you developed for your schools that would be available to others?

I know folks are looking for things specifically about reminding staff about perfumes and I know Scott had mentioned the air fresheners, did you come across any materials or resources like that that you could use to post in schools?

Johna Boulafentis:

That's really good question and actually this it seems obvious but I hadn't really thought about that. No, but that's something that I think I would like to work on.

You know, meeting with the school health council a lot of these things can come up through conversations with the people who are there but that would be actually be a good idea to have other handout and so forth for the other staff.

Brenda Doroski:

Okay.

Johna Boulafentis:

The one thing that we did hand out was, again, that material that Mansel had created for the principles and for the staff.

Brenda Doroski:

Terrific, and I think we can follow up with Mansel to make sure that we can have some links to that and we'll include them with the webinar resources so folks can go and see that.

Scott, did you design any outreach materials for the Head Start Program and the school?

Scott Weir:

They weren't specific to them. They're offered though like at the parent teacher conferences. We have brochures. We've got some information that is just taken off the web and from different agencies. But we also like to do our own brochures and personalize them and we have one on asthma triggers and asthma management plans. We have one on home winterization and, you know, we kind of like to warn people that winterization is a really good thing and it helps your energy build and it helps you stay a little warmer maybe, but it also keeps the air in the house and your indoor air quality problems might tend to go up.

We try to communicate things like that and we do that through often through our own brochures. One good idea though and talking to what Johna was just saying, we do things with the Kickapoo Nation School. We did a rain barrel exchange where the students at the school did traditional artwork, their own original designs on rain barrels. And we've also done a water quality calendar that is just coming out this month featuring artwork.

I'm thinking maybe design of, like, posters by students is used in the school might be one approach to take – to get kids involved and get some of that information up, posted around the building, it's probably worth looking into.

Brenda Doroski:

Thanks, Scott, that's a great idea having the kids design the posters on indoor air quality management and things to be doing to maintain good indoor quality in their school, so that's terrific.

I think we have time for one last question, but you can, others, still type in your questions and we'll address them in writing. But we have time I think for one more and that was about the housing authority presentations that you give. The question is are the presentations to the housing authority residents required or optional, and if they're optional how do you encourage people to attend?

Scott Weir:

This is Scott, I'll take that first. They're optional, and we did ours at like 10 o'clock in the morning, our most recent one, and people were encouraged to attend. People just came because they have an interest, but they are also encouraged to attend with free breakfast pizza and maybe that got some folks there, I don't know. We had orange juice, coffee, breakfast pizza, housing kind of put a whole thing together to create a pleasant informal kind of almost party-like atmosphere, so work through well.

Brenda Doroski:

Terrific, thanks, Scott, I think people – those are great suggestions on how you’ve done it, and we have a lot of other folks that have done similar things with families and it’s really important to engage them, meet their needs, see what their questions are, and to make it fun and engaging, so that’s a great example.

Contact Information

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Indoor Air Quality (IAQ)

Brenda Doroski:

So with that, we will end today. Here's our contact information. So if you have ideas and suggestion as well or questions, you can contact us. We'd be happy to help and you'll receive an email from us in a couple of weeks when the webinar proceedings are posted along with the questions and answers and you will be able to access some of our other resources as well on our website.

So thank you very much for participating in today's webinar and we look forward to joining you on the future webinar. Have a great day.